Security on the Desktop

Fighting the Enemy Within

GovTechNet 99-15 June 99

Army Research Laboratory

Adelphi Lab Center (ARL-ALC)

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This briefing entitled “Security on the Desktop: Fighting the Enemy Within” was presented by LTC Paul Walczak, of the Army Research Laboratory to GovTechNet 99 in June 1999. It examines the scope of the challenges of securing Army information and information networks and provides some examination of some of the INFOSEC research areas that will tackle this problem.

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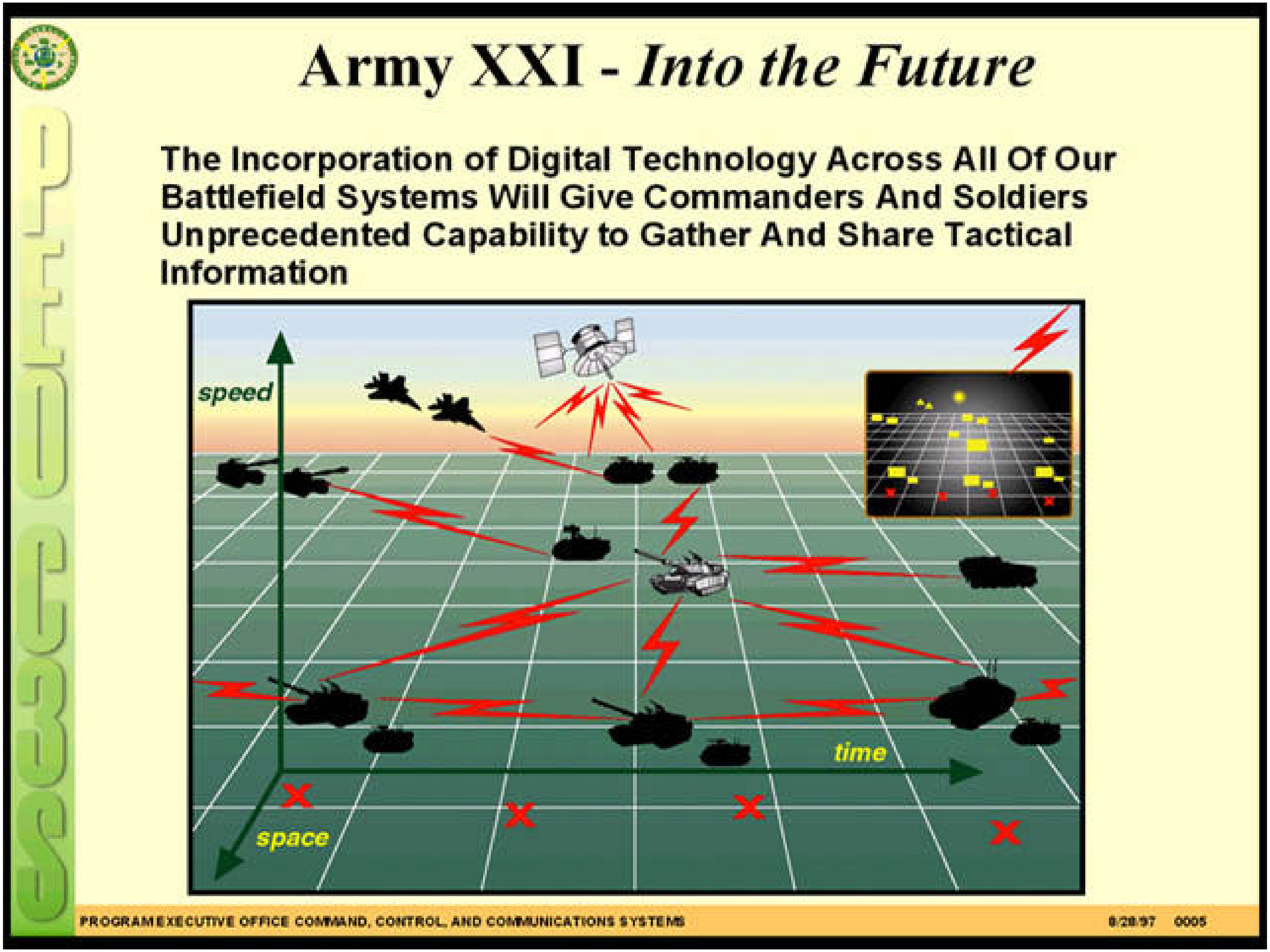


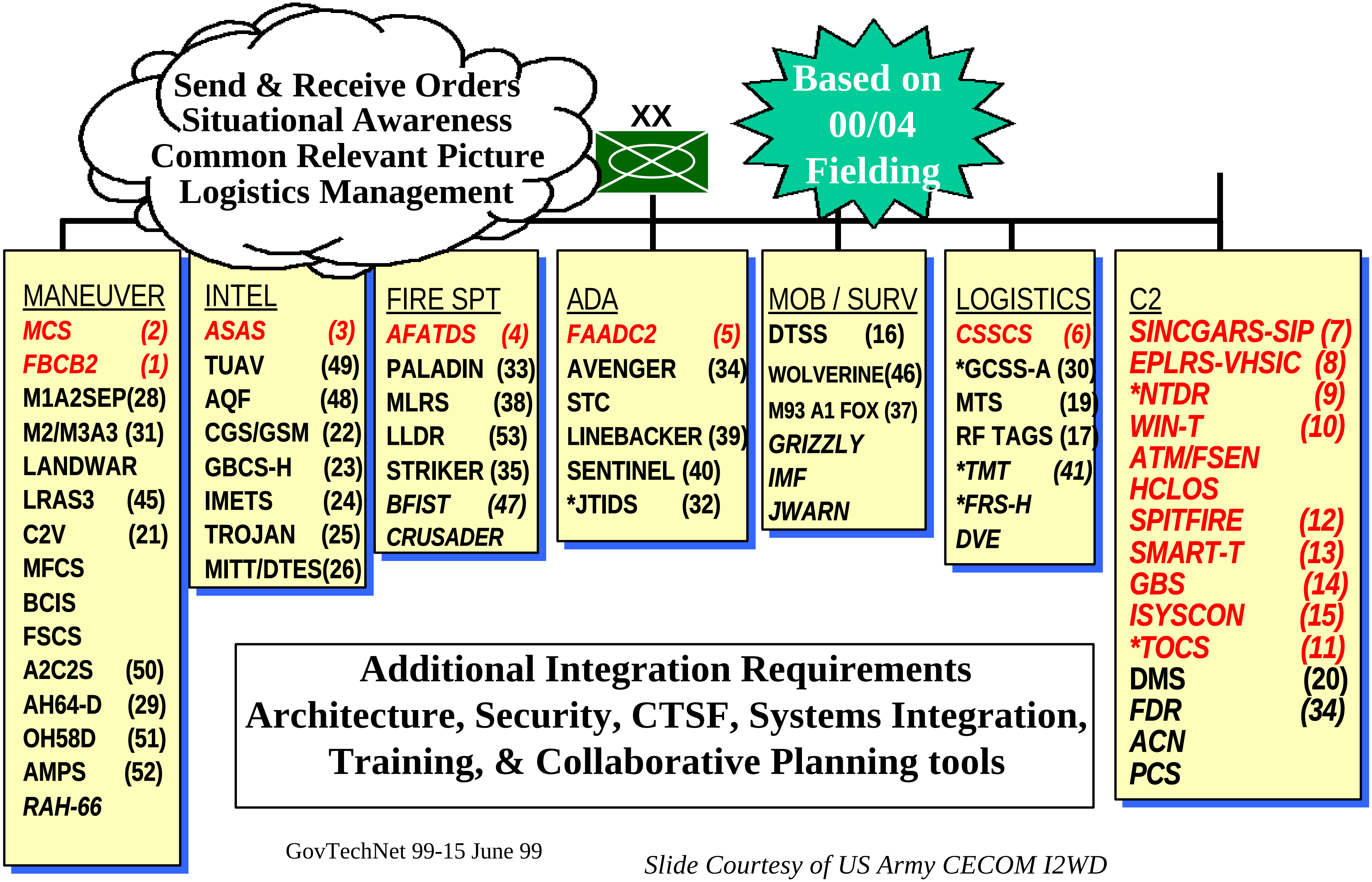
Army XXI - *Into the Future*

The Incorporation of Digital Technology Across All Of Our Battlefield Systems Will Give Commanders And Soldiers Unprecedented Capability to Gather And Share Tactical Information

PROGRAM EXECUTIVE OFFICE COMMAND, CONTROL, AND COMMUNICATIONS SYSTEMS 8/28/97 0005

Slide Courtesy of US Army PEOC3S

U.S. Army Near Term Requirements FDD Division Chart



Send & Receive Orders
Situational Awareness
Common Relevant Picture
Logistics Management

XX

Based on 00/04 Fielding

MANEUVER
- *MCS (2)*
- *FBCB2 (1)*
- M1A2SEP(28)
- M2/M3A3 (31)
- LANDWAR
- LRAS3 (45)
- C2V (21)
- MFCS
- BCIS
- FSCS
- A2C2S (50)
- AH64-D (29)
- OH58D (51)
- AMPS (52)
- *RAH-66*

INTEL
- *ASAS (3)*
- TUAV (49)
- AQF (48)
- CGS/GSM (22)
- GBCS-H (23)
- IMETS (24)
- TROJAN (25)
- MITT/DTES(26)

FIRE SPT
- *AFATDS (4)*
- PALADIN (33)
- MLRS (38)
- LLDR (53)
- STRIKER (35)
- *BFIST (47)*
- *CRUSADER*

ADA
- *FAADC2 (5)*
- AVENGER (34)
- STC
- LINEBACKER (39)
- SENTINEL (40)
- *JTIDS (32)

MOB / SURV
- DTSS (16)
- WOLVERINE(46)
- M93 A1 FOX (37)
- *GRIZZLY*
- *IMF*
- *JWARN*

LOGISTICS
- *CSSCS (6)*
- *GCSS-A (30)
- MTS (19)
- RF TAGS (17)
- **TMT (41)*
- **FRS-H*
- *DVE*

C2
- *SINCGARS-SIP (7)*
- *EPLRS-VHSIC (8)*
- **NTDR (9)*
- *WIN-T (10)*
- *ATM/FSEN*
- *HCLOS*
- *SPITFIRE (12)*
- *SMART-T (13)*
- *GBS (14)*
- *ISYSCON (15)*
- **TOCS (11)*
- DMS (20)
- *FDR (34)*
- *ACN*
- *PCS*

Additional Integration Requirements
Architecture, Security, CTSF, Systems Integration,
Training, & Collaborative Planning tools

GovTechNet 99-15 June 99

Slide Courtesy of US Army CECOM I2WD

U.S. Army Objective Requirements
ABCS Systems/Networks Chart

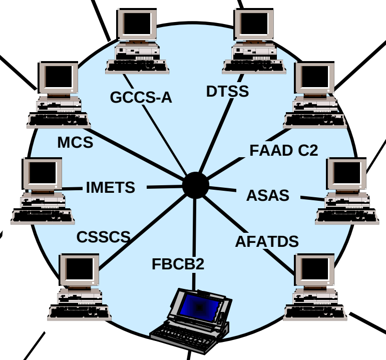
GCCS-A Inerop
AIBS-army-96
FAISA-army-97
IMETS-army-97-98
ISYSCON-army-U
TARSTAT-army-97-98
AMSAA-joint-96
APC-joint-96
ASAS-joint-97
ATCOM-joint-96
AWDS-joint-97
CASCOM-joint-96
CTAPS/TBCMS-joint-97
DAMO-ODR-joint-96
DES-joint-96
DLA/ICIS-joint-96
GCCS/GSORTS-joint-98
GCCS/GSRDI-joint-98
GCCS/JOPES-joint-98
IOC-joint-96
ISC-P-joint-96
JTAV-joint-97
LOGSA-joint-96
MCS-joint-96
PERSCOM-joint-96
RAMS-joint-96
REQVAL-joint-96
SAMAS-joint-96
TAV-joint-96

MCS Interop
AGCCS-army-96
DTSS-army-96
LFCS-army-97
CTAPS-joint-97
JMCIS-joint-98
JStarsCGS-joint-98
TCO-joint-98
AUSTACCS-alliled-98
HEROS-allied-96
LFCCIS-allied-97
QIFS-allied-98
SIACCON-allied-98
SCIF-allied-96

IMETS Interop
GPS-army-
MMS-army-
UAV-army-
JSTARS CGS-joint

CSSCS Interop
DAMM-R-army-99
ICS3-army-99
SAAS/MOD-army-99
SAMS/2-army-99
SARSS/1-army-97
SARSS/2AD-army-98
SIDPERS/2.75-army-97
SIDPERS-3.army-98
SPRS/R-army-97
TAMMIS-army-98
ULLS/S4-army-98

DTSS Interop
FAST-joint-
JSTARS CGS-joint-
MITT-joint-

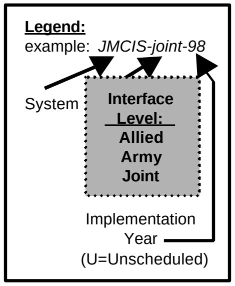


FBCBS Interop
A2C2S-army-99
BCIS-army-
KIOWA-army-U
LVRS-army-U
M1A2 SEP-army-
M2A3-army-
MICAD-
NBCRS-army
Paladin-AFCS
PLGR-army-97
LandWarrior-army

FAAD C2 Interop
LLAPI-allied-95
GBS Radar-army-94
HIMAD-army-94
LSDIS Radar-army-97
TIBS-army-U
AWACS-joint-93
Hawkeye-joint-93

AFATDS Interop
ATHS-army-97
BCS-army-97
FBCB2-army-00
FDS-army-97
Firefinder (q-36)-army-97
FIST DMD-army-97
FOCC-army-97
FOS-army-98
IDM-army-99
IFSAS-army-97
LtacFire-army-97
MBC-army-97
MDS-army-97
MFCS-army-99
MMS-army-97
UAV/TS/00-army-U
AFATDS-joint-99 (MC)
CTAPS/TBMCS-joint-98
IFSAS-joint-97 (MC)
Jstars/CGS-joint-97
TacFire-01-joint-U (MC)
ADLER-allied-98
ATLAS-allied-98
BATES-allied-98

ASAS Interop
Adv Quickfix-army-U
AMS-army-00
ARL-army-U
ATCAE-army-97
CTS/CTAPS-army-97
DAI-army-97
Enhan Trackworl-army-U
EPDS-army-97
ETRAC-army-U
ETUT-army-97
GBCS-army-U
Guardrail-army-97
IEWCS-army-U
IPF-army-97
MIES-army-97
MIIT-army-97
NGIC-army-U
NPIC-army-U
NSA-army-07
SSP/S-army-97
TEAMMATE-army-97
TES-army-97
THMT-army-97
TrafficJam-army97
Trailblazer-army-97
TRRIP-army-U
UAV GCS-army-97
UAV MPCS-army-97
CARS/TRIGS-joint-97
IAC-joint-97
JMCIS-joint-97
JstarsCGS-joint-97
NIPS-joint-97
TBCMS-joint-U
TCAC-joint-97
PASS-K-alllied-U
RAPIDE-allied-97

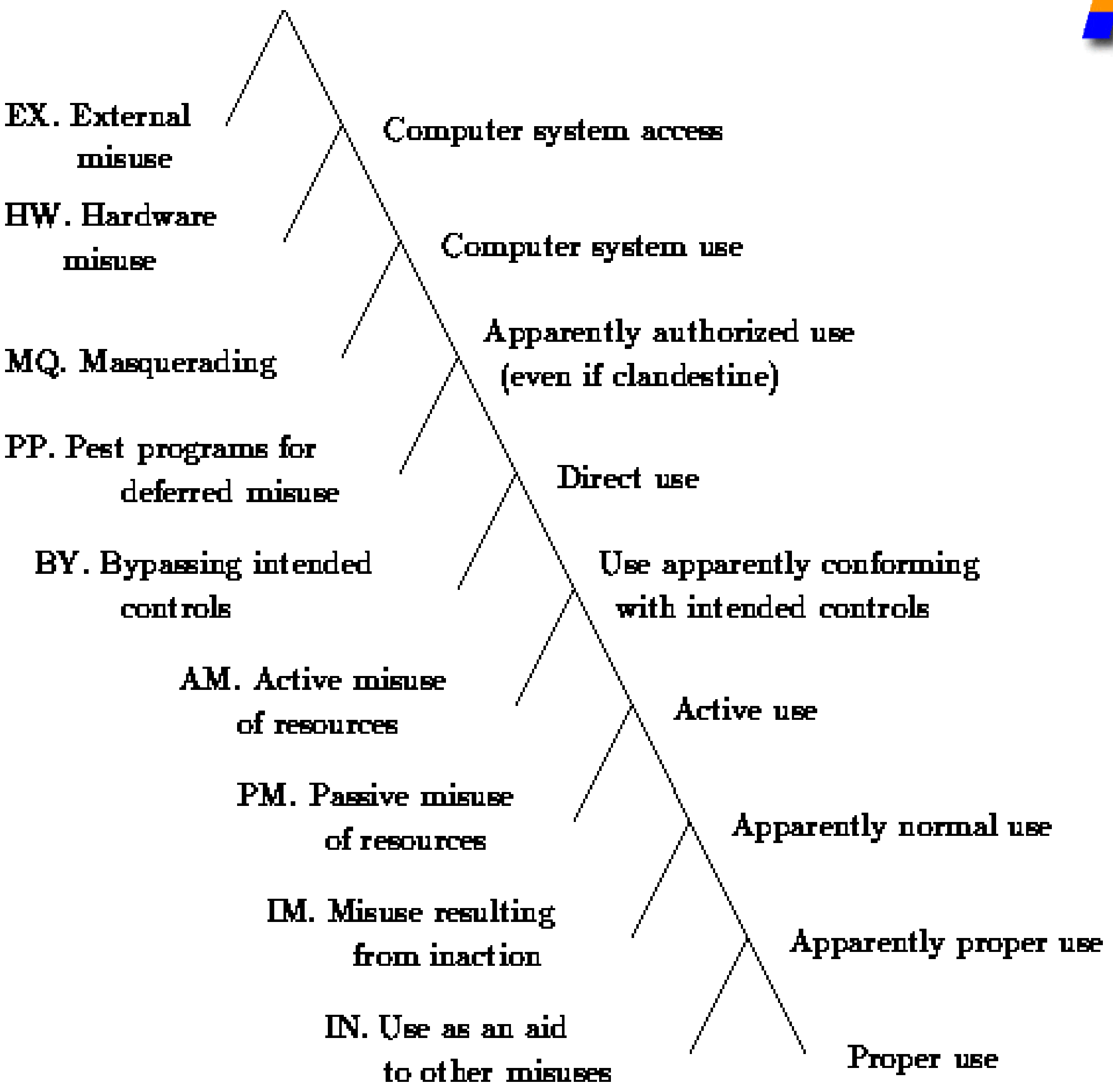

Legend:
example: *JMCIS-joint-98*
System
Interface Level:
Allied
Army
Joint
Implementation Year
(U=Unscheduled)

Slide Courtesy of US Army CECOM I2WD

Partial View to Problem’s Scale

Army Information Systems			**14,544**
– Major Systems		1,219	
• Mission Critical	638		
• Other Major	581		
– Other Systems	(996 Web sites)	13,325	
Information Technology Controlled Devices			**444,196**
– PCs/Servers		365,077	
– Facilities & Other		42,048	
– Communications Hardware/Software		7,071	
Army IS Security Program (total funding)			**$ 87 million**

Classes of Computer Misuse Techniques



EX. External misuse

Computer system access

HW. Hardware misuse

Computer system use

Apparently authorized use (even if clandestine)

MQ. Masquerading

PP. Pest programs for deferred misuse

Direct use

BY. Bypassing intended controls

Use apparently conforming with intended controls

AM. Active misuse of resources

Active use

PM. Passive misuse of resources

Apparently normal use

IM. Misuse resulting from inaction

Apparently proper use

IN. Use as an aid to other misuses

Proper use

Securing Systems at the Desktop

- Insider Misuse
- Development Practice
- Threat is Learning
- Warrior’s “desktop”
- Assurance >> Securing Systems
- Process and Culture

- Holistic interpretation
- Acquisition Strategy
- Education, Training
- Spectrum of Information
- Overarching concept for INFOSURV
- No silver bullets

Directions for INFOSURV R&D

❶ **Robust networking protocols**

❷ **Requirements metrics**

❸ **Predictable systems composition**

❹ **Data analysis and correlation**

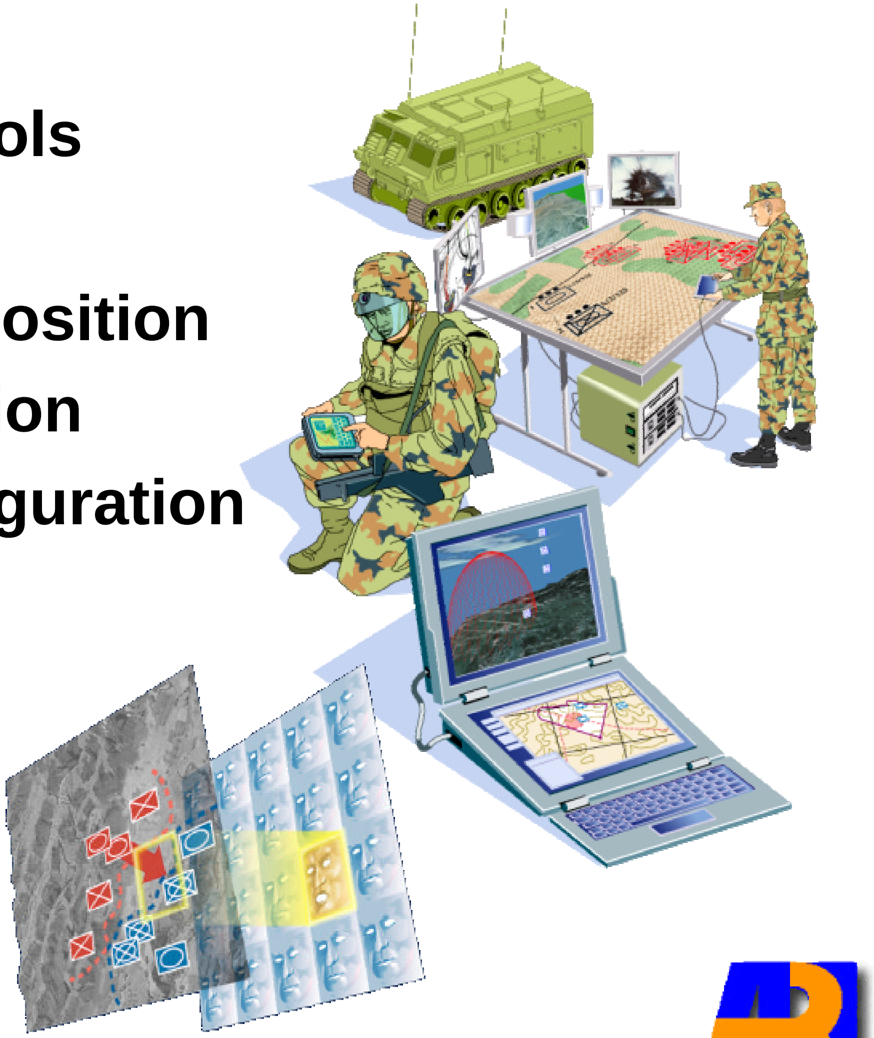
❺ **Dynamic system (re) configuration**

❻ **Dynamic adaptability**

❼ **Architectures**

❽ **Mobile code**

❾ **Components**



INFOSEC Research Areas

1 -Security Engineering Methodologies

2 -Detecting Intrusion and Misuse

3 -Mobile, Foreign Code

4 -Controlled Sharing

5 -Denial of Service

6 -Application Security

7 -Communications Security

8 -Security in Mobile Environments

9 -Security Management Infrastructure